AMENDMENTS TO THE CLAIMS

1. (Currently amended) A method for determining ~~the~~ a concentration of ~~a substance~~ glucose in at least one of an in-vitro [[or]] and in-viva specimen containing body liquid, the method comprising: ~~the steps of~~

arranging a first electrode ~~(18)~~ at said specimen, wherein ~~said~~ the first electrode is electrically insulated from the specimen by a cover layer, and wherein the first electrode is arranged on a first side of a electrically insulating substrate between the substrate and the cover layer;[[,]]

applying a modulated electrical voltage to the first electrode for generating a modulated field in the specimen; and

measuring at least one parameter ~~(A, phi)~~ depending on a response of the specimen to the field and determining the concentration therefrom.

2. (Currently amended) The method of claim 1 comprising the step of arranging a second electrode ~~(19, 22)~~ at said specimen, wherein the modulated electrical voltage is applied between the first and the second electrode ~~(19, 22)~~.

3. (Currently amended) The method of claim 2 wherein the second electrode ~~(19, 22)~~ is in electric contact with the body liquid in the specimen.

4. (Currently amended) The method of ~~one of the preceding claims~~ claim 1 further comprising the step of measuring a temperature ~~(T)~~ of the specimen and using the temperature ~~in the determination of~~ to determine the concentration.

5. (Currently amended) The method of ~~one of the preceding claims~~ claim 1 wherein the modulated electrical voltage is a sine voltage.

6. (Currently amended) The method of ~~one of the preceding claims~~ claim 1 wherein the modulated electrical voltage has a frequency between 10 MHz and 2 GHz~~, in particular between 20 MHz and 70 MHz~~.

7. (Currently amended) The method of ~~one of the preceding claims~~ claim 1 wherein the parameter ~~(A, phi, f0)~~ depends on the electrical impedance at the first electrode.

8. (Currently amended) The method of ~~one of the preceding claims~~ claim 1 wherein the response of the specimen is measured by measuring a signal reflected from the first electrode.

9. (Currently amended) The method of ~~one of the preceding claims~~ claim 1 wherein an antenna electrode ~~(33)~~ is arranged at the specimen in proximity to the first electrode ~~(18)~~ and wherein the response of the specimen is measured by measuring a signal transmitted from the first electrode ~~(18)~~ to the antenna electrode ~~(33)~~.

10. (Canceled)

11. (Currently amended) The method of ~~one of the preceding claims~~ claim 1 wherein the specimen is a living body.

12. (Currently amended) The method of ~~one of the preceding claims~~ claim 1 comprising the step of using calibration data to convert the parameter ~~(A, phi, f0)~~ to the concentration.

13. (Currently amended) The method of ~~one of the preceding claims~~ claim 1 wherein the first electrode forms part of a resonant circuit ~~(5)~~ having a resonance frequency ~~(f0)~~ and wherein the resonant circuit ~~(5)~~ is operated substantially at the resonance frequency.

14. (Currently amended) The method of claim 13 wherein the resonant circuit is at least part of a tank circuit of an active oscillator ~~(40)~~ and wherein the parameter is at least one of an amplitude ~~(A)~~ and[[/or]] a frequency ~~(f0)~~ of a signal generated by ~~said~~ the oscillator ~~(40)~~.

15. (Currently amended) The method of claim 13 wherein the modulated voltage is frequency sweeped from a frequency ~~(fmin)~~ below the resonance frequency ~~(f0)~~ to a frequency ~~(fmax)~~ above the resonance frequency, and ~~in particular~~ wherein the parameter is at least one of a signal reflected to the first electrode at the resonance frequency ~~(18)~~ [[or]] and transmitted to an antenna electrode ~~(33)~~ at the resonance frequency ~~(f0)~~.

16. (Currently amended) A device for determining ~~the~~ a concentration of ~~a substance~~ glucose in at least one of an in-vitro and [[or]] in-vivo specimen containing body liquid, ~~in particular for carrying out the method of one of the preceding claims,~~ the device comprising:

an electrically insulating substrate;

a first electrode ~~(18)~~ covered by a cover layer ~~(29)~~ of insulating material, wherein the first electrode is arranged on a first side of the substrate between the substrate and the cover layer;

a signal source ~~(1)~~ connected to the first electrode ~~(18)~~ and configured to apply~~ing~~ a modulated electrical voltage to the first electrode ~~(18) for~~ to generate ~~generating~~ an electric field in the specimen[[,]];

a measuring circuit ~~(7) for measuring~~ configured to measure at least one parameter depending on a response of the specimen to the field[[,]]; and

a data processor ~~(8) determining~~ configured to determine the concentration from the parameter.

17. (Currently amended) The device of claim 16 comprising a holder ~~(31)~~ for fixing the first electrode ~~(18)~~ to a part of a body with the cover layer ~~(29)~~ facing the body.

18. (Currently amended) The device of ~~one of the claims 16 or 7~~ claim 28 further comprising an electrically insulating substrate ~~(17)~~, wherein the first electrode ~~(18)~~ is arranged on a first side ~~(20)~~ of the substrate ~~(17)~~ between the substrate ~~(17)~~ and the cover layer ~~(29)~~.

19. (Currently amended) The device of claim [[18]]16 further comprising a second electrode ~~(19, 22)~~ arranged on the substrate, wherein the signal source ~~(2)~~ is connected to and configured to apply the modulated electrical voltage between the first ~~(18)~~ and the second ~~(19, 22)~~ electrodes.

20. (Currently amended) The device of claim 19, wherein the second electrode ~~(19, 22)~~ comprises a bottom electrode layer ~~(22)~~ arranged on a second side ~~(21)~~ of the substrate ~~(17)~~, said bottom electrode layer ~~(22)~~ having a larger extension than said top electrode layer ~~(18)~~.

21. (Currently amended) The device of ~~one of the~~ claim[[s]] 19 ~~or 20~~, wherein the second electrode ~~(19, 22)~~ comprises a top electrode layer ~~(19)~~ arranged on the first side ~~(20)~~ of the substrate ~~(17)~~, said top electrode layer ~~(19)~~ being arranged around at least part, in particular substantially all, of the first electrode ~~(18)~~.

22. (Currently amended) The device of ~~one of the claims 16 to 21~~claim 16, wherein the first electrode ~~(18)~~ is elongate having a width ~~much~~ substantially smaller than a length.

23. (Currently amended) The device of ~~one of the claims 16 to 22~~ claim 16 comprising a first ~~(4)~~ and a second ~~(6)~~ signal path between the signal source ~~(1)~~ and the measuring circuit ~~(7)~~, wherein the first electrode ~~(18)~~ in arranged in the first signal path ~~(4)~~ and a reference load ~~(R3)~~ is arranged in the second signal path ~~(6)~~, and wherein the measuring circuit ~~(7)~~ is adapted to measure at least one of a relative amplitude ~~(A)~~ and[[/or]] a phase ~~(phi)~~ of signals from the first and second signal paths.

24. (Currently amended) The device of ~~one of the claims 16 to 23~~ claim 16 wherein the first electrode ~~(18)~~ is part of a capacitor ~~(C)~~ of a resonant circuit ~~(5)~~ comprising the capacitor ~~(C)~~ and an ~~inductance~~ inductor ~~(L)~~ connected to the signal source ~~(1)~~.

25. (Currently amended) The device of claim 24 wherein the capacitor ~~(C)~~ and the ~~inductance~~ inductor ~~(L)~~ are arranged in series.

26. (Currently amended) The device of ~~one of the claims 24 or 25~~ claim 24 wherein the measuring circuit ~~(7)~~ is ~~adapted~~ configured to measure a voltage over the resonant circuit ~~(5)~~.

27. (Currently amended) The device of ~~one of the claims 24 to 26~~ claim 24 further comprising an antenna electrode ~~(33)~~ arranged in proximity to the first electrode ~~(18)~~, wherein the measuring circuit ~~(7)~~ is adapted to measure a signal transmitted from the first electrode ~~(18)~~ to the antenna electrode ~~(33)~~.

28. (Currently amended) A device for determining ~~the~~ a concentration of a substance in body liquid of a human body, ~~in particular of one of the claims 15 to 26~~, the device comprising:

an elongate first electrode ~~(18)~~ having a width ~~much~~ substantially smaller than a length[[,]];

a holder ~~(31)~~ for fixing the first electrode ~~(18)~~ to at least one of an arm [[or]] and a leg of a body with a longitudinal axis of the first electrode being substantially parallel to the at least one arm [[or]] and leg;

a signal source connected to the first electrode applying a modulated electrical voltage to the first electrode ~~(18)~~ for generating a modulated field in the specimen[[,]];

a measuring circuit ~~(7)~~ for measuring at least one parameter ~~(A, phi, f0)~~ depending on a response of the specimen to the field[[,]]; and

a data processor determining the concentration from the parameter.

29. (New) The device of claim 28 further comprising a ring electrode extending around the first electrode.

30. (New) The device of claim 29 wherein the ring electrode is connected to a ground.

31. (New) The device of claim 29 wherein the ring electrode surrounds a single strip electrode with the strip electrode forming the first electrode.

32. (New) The method of claim 6 wherein the modulated electrical voltage has a frequency between 20 MHz and 70 MHz.